



DECLARATION

I, Nobuhiko Ikeda, of SHIGA INTERNATIONAL PATENT OFFICE, 3-1, Yaesu 2-chome, Chuo-ku, Tokyo, Japan, understand both English and Japanese, am the translator of the English document attached, and do hereby declare and state that the attached English document contains an accurate translation of the official certified copy of Japanese Patent Application No. 2000-020702 that all statements made herein are true to the best of my knowledge.

Declared in Tokyo, Japan

This 28th day of November, 2003

A handwritten signature in cursive script, reading "Nobuhiko Ikeda", written over a horizontal dashed line.

Nobuhiko Ikeda

[Document Type] Specification

[Title of the Invention] Portable Radio Communication

Apparatus

[Claims]

- 5 1. A portable radio communication apparatus which has a sound input device for inputting sound, a sound output device for outputting sound, an input device for inputting various signals, and a communication device for communicating various communication data such as audio data, text data, and image data, the portable radio communication apparatus including:
- 10 a first case,
- a second case which is rotatably connected to the first case and which can be in open and closed positions with respect to the first case,
- 15 a first display which is exposed when the second case is in the open position,
- a second display which is exposed whether the second case is in the open or closed position,
- 20 an open/closed position detector which detects whether the second case is in the open or closed position with respect to the first case,
- an expression driver display controller that controls the on/off state of the first display and the second display in response to the detected result by the open/closed position detector,
- 25 a controller which controls the expression driver display controller to turn off the second display if the open/closed

position detector has detected the second case being in the open position.

2. A portable radio communication apparatus according to claim 1, wherein the second display is disposed on the opposite side to the first display, and either the first case or the second case has a window for the first display in the inner face and has a window for the second display in the outer face.

[0001]

10 [Technical Field of the Invention]

The present invention relates to portable radio communication apparatuses which employ various communication systems, and in particular, the present invention relates to foldable portable radio communication apparatuses.

15 [0002]

[Prior Art]

Recently, portable communication apparatuses which employ communication systems which enable high-speed transmission of data, such as PDC (Personal Digital Cellular), CDMA (Code Division Multiple Access), GSM (Global System for Mobile Communication), and PHS (Personal Handy-phone System), are widely used. In addition, communication systems of the technologies of the next generation, such as WCDMA (Wide-band CDMA) and CDMA2000 are under development.

25 Among these types of portable radio communication apparatuses, ones having foldable structures so as to improve portability are known. However, a display section of such a

portable radio communication apparatus of foldable type can not be seen from the outside when it is folded.

Therefore, there are portable radio communication apparatuses having structures such that the display function is maintained even when they are folded, which are provided with secondary display sections which can be seen from the outside even when the portable radio communication apparatuses are folded, as described in Japanese Unexamined Patent Application, First Publication (Kokai), No. Hei 6-37697.

10 [0003]

[Problems to be Solved by the Invention]

However, with regard to the above conventional portable radio communication apparatus, if the second display section is disposed on the backside of the first display section, for example, a third person can check the second display when the user opens the portable radio communication apparatus in order to see the first display section.

In such a case, if the second display section is left on, there has been a possibility that the displayed contents can be seen, and there has been a problem that privacy may not be protected.

[0004]

The present invention was achieved in view of the above circumstances, and the is to provide a portable radio communication apparatus which provides protection of privacy from a third person.

[0005]

[Means for Solving the Problem]

In order to solve the above problem and achieve the above object, the portable radio communication apparatus according to claim 1 is a portable radio communication apparatus which
5 has a sound input device for inputting sound, a sound output device for outputting sound, an input device for inputting various signals, and a communication device for communicating various communication data such as audio data, text data, and image data, the portable radio communication apparatus
10 including:

- a first case,

- a second case which is rotatably connected to the first case and which can be in open and closed positions with respect to the first case,

- 15 a first display which is exposed when the second case is in the open position,

- a second display which is exposed whether the second case is in the open or closed position,

- 20 an open/closed position detector which detects whether the second case is in the open or closed position with respect to the first case,

- an expression driver display controller that controls the on/off state of the first display and the second display in response to the detected result by the open/closed position
25 detector,

- a controller which controls the expression driver display controller to turn off the second display if the open/closed

position detector has detected the second case being in the open position.

[0006]

According to the above structure of the portable radio communication apparatus, when the second case is in the open position with respect to the first case, the open/close position detector detects the open state of the second case, and in response to this detected result, the second display is turned off by the expression driver display controller.

10 Accordingly, the displayed contents on the second display, for example, personal information such as the telephone number of the opposite party displayed when receiving or making a call, can be prevented from being seen by a third person, and the privacy can be securely protected.

15 [0007]

In the portable radio communication apparatus according to claim 2, the second display is disposed on the opposite side to the first display, and either the first case or the second case has a window for the first display in the inner face and has a window for the second display in the outer face.

[0008]

According to the above structure of the portable radio communication apparatus, when a user of the portable radio communication apparatus is checking displayed contents on the first display through the window for the first display, the privacy can be securely protected even if the window for the

second display is unavoidably in a position which allows a third person to check the window for the second display.

[0009]

[Embodiments of the Invention]

5 An embodiment of a portable radio communication apparatus which corresponds to the first aspect of the present invention will be described in the following with reference to the drawings.

10 In Figs. 1 and 2, reference numeral 1 indicates a portable radio communication apparatus according to the present embodiment. This portable radio communication apparatus has a first case 2 and a second case 4 which is rotatably connected to the upper portion of the first case 2 by a hinge 3. By rotating the second case 4 around the
15 connection by the hinge 3, the second case 4 can be in open and closed positions with respect to the first case 2.

20 That is, by rotating the second case 4 from the closed position (the position shown in Fig. 2), the second case 4 comes to the open position (the position shown in Fig. 1). In contrast, by rotating the second case 4 in the open position to the opposite direction, the second case 4 comes to the closed position.

[0010]

25 On the front side of the second case 4, which is a side to be put on the first case 2 when in the closed position, a main display section (first display) 11 is provided. In addition, on the back side, a sub-display section (second

display) 12 is provided. The main display section 11 and the sub-display section 12 are constituted by liquid crystal display panels which are disposed in the positions facing a window 11a for the main display section (window for the first display) and a window 12a for the sub-display section (window for the second display), respectively. Various contents are displayed on the main display section 11 and the sub-display section 12.

In the upper portion on the front side of the second case 4, a speaker (sound output device) 13 is provided.
[0011]

On the front side of the first case 2, which is to be closed by the second case 4, a plurality of operation keys (input device) 14 are provided, and using these operation keys 14 various inputting operations can be carried out.

In the lower portion on the front side of the first case 2, a microphone (sound input device) 15 is provided. In addition, in the vicinity of the upper portion on the back side, a retractable antenna 16 is provided, by which communication of various data such as audio data, text data, image data, and the like can be carried out.

With this portable radio communication apparatus 1, when the second case 4 is in the open position, input of sound is carried out using the microphone 15, and the speaker 13 emits the voice of the opposite party, the alert sounds, alarms and the like.

[0012]

Next, functions of the above portable radio communication apparatus 1 will be further described with reference to a functional block diagram shown in Fig. 3.

In this figure, reference numeral 21 indicates a
5 detecting switch (open/closed position detector).

This detecting switch 21 detects whether the second case 4 is in the open or closed position with respect to the first case 2. The detection signal is output at the control section (controller) 22.

10 In the second case 4, a main illuminating device (first illuminator) 23A and a sub-illuminating device (second illuminator) 23B are provided. The main illuminating device 24A and the sub-illuminating device 24B illuminate the main display section 11 and the sub-display section 12,
15 respectively.

[0013]

A change-over switch (expression driver display controller) 24 is connected to the main display section 11 and the sub-display section 12. The change-over switch 24 selects
20 one of the lines to supply power from the battery to the main display section 11 and the sub-display section 12 and a variety of information from the control section 22...

That is, the control section 22 is connected to the change-over switch 24 so that the control section 22 outputs
25 signals for controlling switching to the change-over switch 24 based on the detection signal from the detecting switch 21.

Reference numeral 25 indicates a battery, which supplies

all electric power for the portable radio communication apparatus 1.

[0014] A radio section (communication device) 26 sends and receives various data, such as audio data, text data, and
5 image data, to and from the terminal of the opposite party via the antenna 16 using a radiocommunication network.

From the communication data received by the radio section 26, audio data is separated by a sound processing section, which is not shown in the drawings, and the sound is emitted
10 from the speaker 13. The sound input by the microphone 15 is input as a sound signal into the sound processing section, where the sound signal is converted into audio data, and the audio data are sent as communication data to the radio section 26, from which the communication data can be sent to the
15 terminal of the opposite party via the antenna 16.

[0015]

Next, control of the main display section 11 and the sub-display section 12 by the control section 22 will be described.

20 When the second case 4 is brought into the closed position from the open position, on the basis of the detection signal from the detecting switch 21, which comprises, for example, a contact switch, the control section 22 judges that the second case 4 is in the closed position.

25 In response, the control section 22 outputs a signal to control switching to the change-over switch 24 so as to supply electric power from the battery 25 to the sub-display section

12.

Accordingly, the electric power from the battery 25 is supplied, for example, only to the sub-display section 12 via the change-over switch 24, and in addition a variety of information from the control section 22 is transmitted only to the sub-display section 12 and displayed thereon.

[0016]

Next, when the second case 4 is brought into the open position from the closed position, on the basis of the detection signal from the detecting switch 21, the control section 22 judges that the second case 4 is in the open position.

In response, the control section 22 outputs a signal to control switching to the change-over switch 24 so as to stop supply of electric power and transmission of information to the sub-display section 12 to turn it off, and start supplying electric power to the main display section 11 to turn it on.

Accordingly, the electric power from the battery 25 is supplied only to the main display section 11 via the change-over switch 24, and in addition a variety of information from the control section 22 is transmitted only to the main display section 11 and displayed thereon.

Therefore, it is possible to prevent any information from being obtained from the sub-display section 12 when the second case 4 is in the open position.

[0017]

Thus, with the portable radio communication apparatus 1

according to this embodiment, only when the second case 4 is in the closed position, the sub-display section 12 is on, and the condition of operation the portable radio communication apparatus 1 can be grasped even though the main display section 11 is covered. In addition, when the second case 4 is in the open position, and the main display section 11 is referred to by the user, the sub-display section 12 is turned off, and thereby the privacy can be protected without a risk that some information on the sub-display section 12 is seen, even when the sub-display section 12 is in such a position that a third person can check it as shown in Fig. 4, for example.

[0018]

In this embodiment, although the electric power from the battery 25 and a variety of information from the control section 22 are supplied only to the sub-display section 12 when the second case 4 is in the closed position, the invention is not limited to such a function, and the electric power from the battery 25 and a variety of information from the control section 22 may be supplied to the main display section 11 and the sub-display section 12 to leave on both display sections 11 and 12.

Although the second case 4 is provided with the main display section 11 and the sub-display section 12 in this embodiment, the invention is not limited to such a construction, and the first case 2 may be provided with the main display section 11 and the sub-display section 12, for

example, or one of the first case 2 and the second case 4 may be provided with the main display section 11 while the other case is provided with the sub-display section 12.

[0019] In this embodiment, an electric power supply switch
5 may be provided which switches between lines to supply electric power for illumination to the main illuminating device 23A and the sub-illuminating device 23B with reference to the detection signal from the detecting switch 21. In this case, by controlling the on/off state of the main illuminating
10 device 23A and the sub-illuminating device 23B so as to synchronize with the on/off state of the main display section 11 and the sub-display section 12, waste of electric power can be avoided, and the battery life can be extended.

[0020]

15 [Effects of the Invention]

As explained above, according to the portable radio communication apparatus 1 of the present invention as recited in claim 1, when the second case is in the open position with respect to the first case, by turning off the second display
20 by the expression driver display controller, the displayed contents on the second display, for example, personal information such as the telephone number of the opposite party displayed when receiving or making a call, can be prevented from being seen by a third person, and the privacy can be
25 securely protected.

In addition, according to the portable radio communication apparatus of the present invention as recited in

claim 2, when a user of the portable radio communication apparatus is checking displayed contents on the first display through the window for the first display, the privacy can be securely protected even if the window for the second display is unavoidably in a position which allows a third person to check the window for the second display.

[Brief Description of the Drawings]

[Fig. 1] A perspective view of a portable radio communication apparatus describing the constitution and structure of the portable radio communication apparatus according to an embodiment of the present invention.

[Fig. 2] A perspective view of the portable radio communication apparatus shown in Fig. 1 which is folded.

[Fig. 3] A functional block diagram describing the operations of the portable radio communication apparatus shown in Fig. 1.

[Fig. 4] A diagram describing the portable radio communication apparatus shown in Fig. 1.

[Brief Description of the Reference Symbols]

20	1	Portable radio communication apparatus
	2	First case
	4	Second case
	11	Main display section (first display)
	12	Sub-display section (second display)
25	13	Speaker (sound output device)
	14	Operation keys (input device)
	15	Microphone (sound input device)

- 21 Detecting switch (open/closed position detector)
- 22 Control section (controller)
- 24 Change-over switch (expression driver display controller)
- 26 Radio section (communication device)

5

[Document Type] Drawing

[Fig. 1]

[Document Type] Drawing

[Fig. 2]

[Document Type] Drawing

[Fig. 3]

22 Control section

25 Battery

5 26 Radio section

[Document Type] Drawing

[Fig. 4]

[Document Type] Abstract

[Abstract]

[Problem to be Solved by the Invention] To protect privacy from a third person.

5 [Means for Solving the Problem] A second case 4 is connected to a first case 2 so as to be openable and closable. A change-over switch 24 that selects one of the lines to supply power to the main display section 11 and the sub-display section 12 and a variety of information and detecting
10 switch 21 which detects whether the second case 4 is in the open or closed position are provided. A control section 22 is also provided which controls the change-over switch 24 so as to supply electric power to the sub-display section 12 when the second case 4 is in the closed position and to stop the
15 supply of electric power to the sub-display section 12 when the second case 4 is in the open position.

[Elected Drawing] Fig. 3

FIG. 1

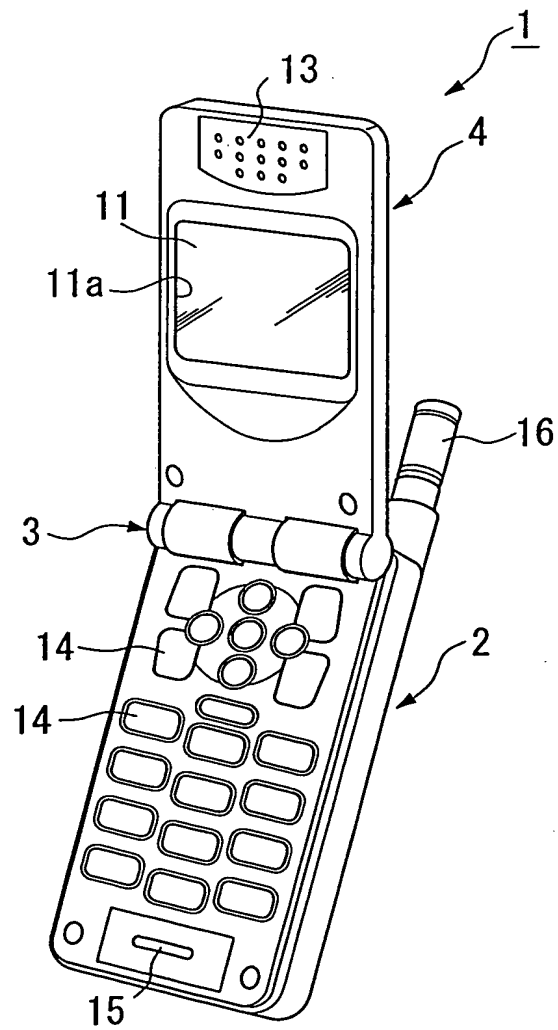


FIG. 2

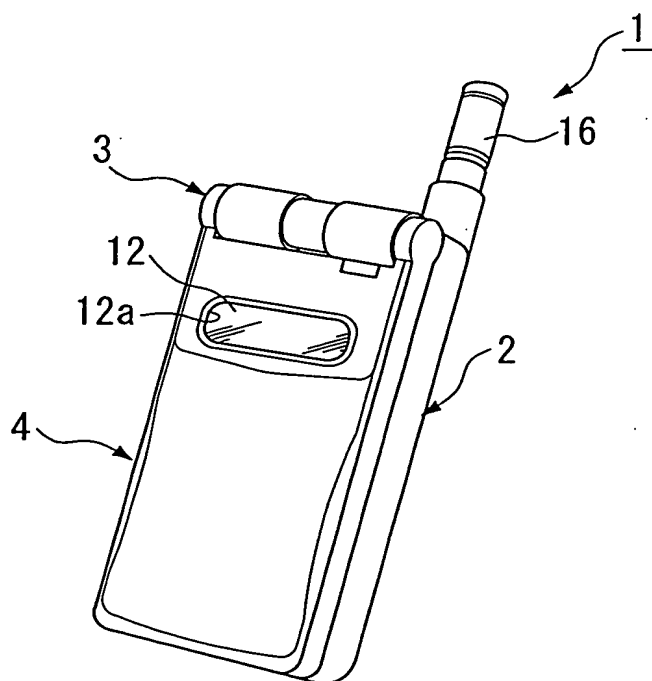


FIG. 3

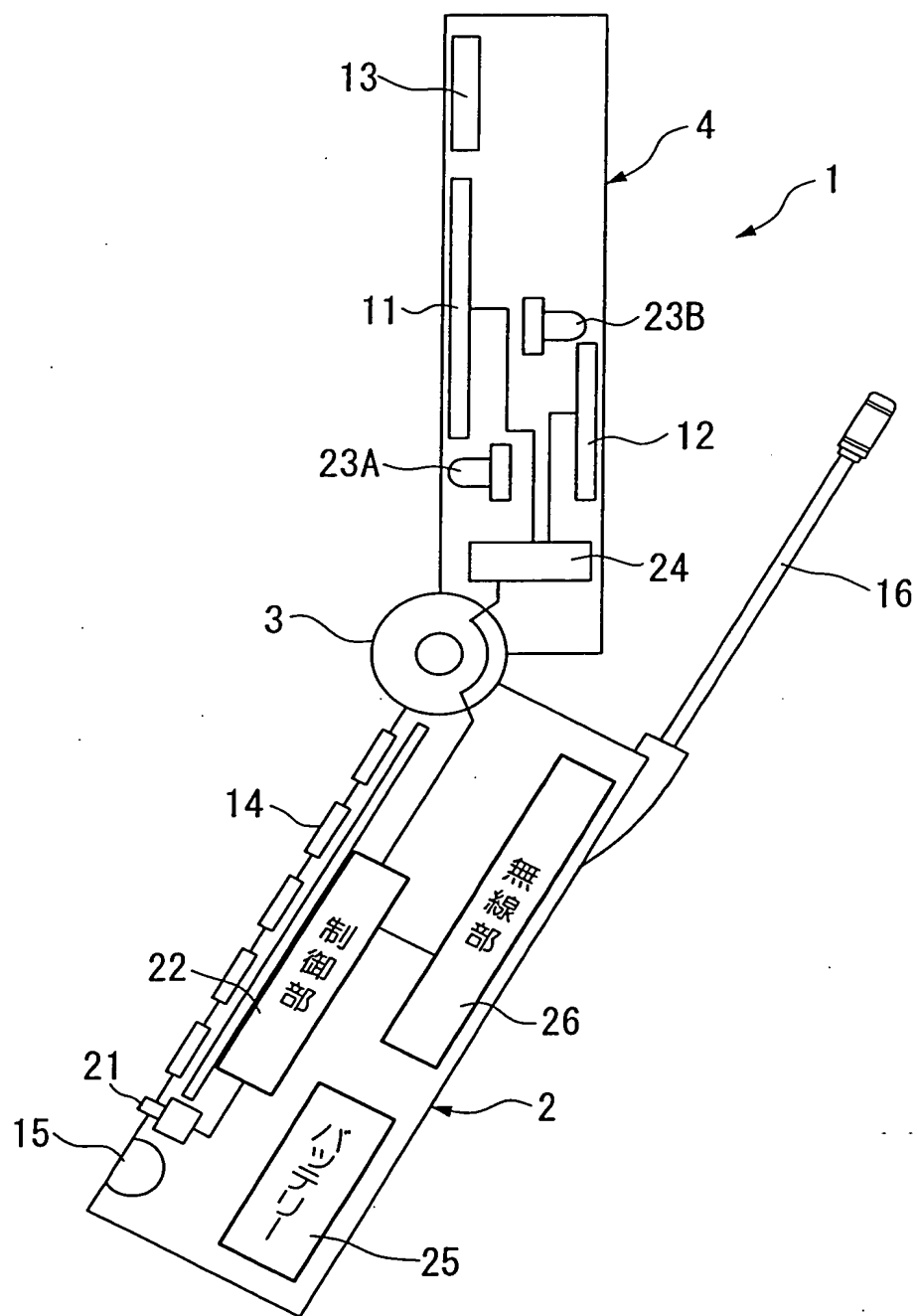
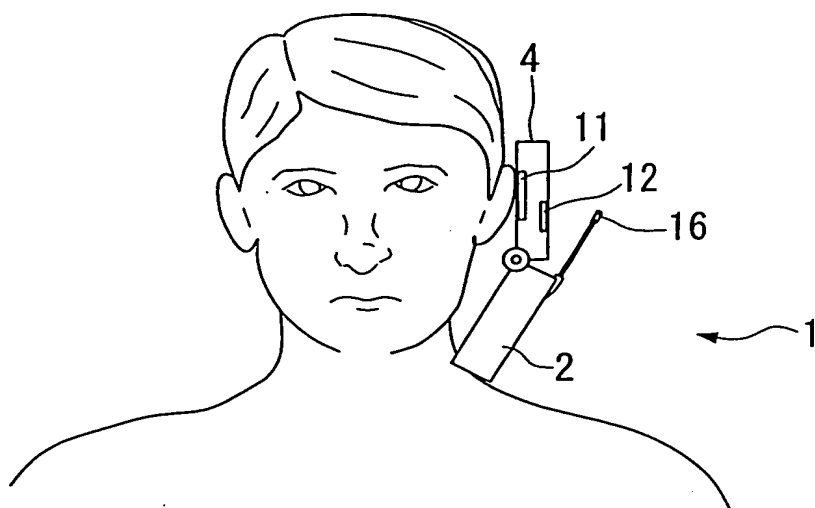


FIG. 4



NOTICE OF REASONS FOR REJECTION

Application Number: 2000-020702
Drafting Date: 2002/02/13 (year/month/day)
Examiner: Yasunobu MIZOMOTO 9473 5J00
Attorney: Masatake SHIGA et al.
Cited Articles: Article 29, Paragraph 2

This application should be rejected for the reason(s) laid forth below. If the applicant wishes to comment thereon, the applicant is invited to submit a response within 60 days from the mailing date of this notice.

REASON(S)

<Reason 1>

The invention(s) according to the below-listed claim(s) of the present application could have been easily made prior to the filing date by a person with average knowledge in the field to which the invention(s) belongs based on the invention(s) disclosed in the below-listed publication(s), distributed in Japan prior to the filing date of this application, and it is therefore deemed to be unpatentable in compliance with the provisions of Japanese Patent Law, Article 29, Paragraph 2.

(See the List of Citations for the cited publications)

EXAMINER'S COMMENTS

- Claims 1, 2
- Citation 1
- Notes

It is deemed that the inventions recited in the claims could have been easily conceived of by a person skilled in the art from the invention disclosed in Citation 1.

(The provision of the display means at some location in the cabinet is nothing more than a matter of design variation which could have been suitably selected by a person skilled in the art.)

<Reason 2>

The invention(s) according to the below-listed claim(s) of the present application is identical to the invention(s) disclosed in the specification or drawings as originally filed with the below-listed application(s) filed prior to the filing date of the present application and made public after the filing date of the present application; the inventor(s) of the present application is not identical to the party(ies) who made the above-mentioned invention(s) for which an application(s) was filed prior to the filing date of the present application; and at the time the present application was filed, the applicant(s) of the present application was not identical to the applicant(s) of the application(s) filed prior to the filing date of the present application; therefore, the invention(s) according to the below-listed claim(s) of the present application is deemed to be unpatentable in compliance with the provisions of Japanese Patent Law, Article 29bis.

(See the List of Citations for the cited publications)

EXAMINER'S COMMENTS

- Claims 1, 2
- Citation 2
- Notes

The inventions according to the claims are identical to the invention disclosed in the specification or drawings as originally filed with below-indicated application 2. (In particular, refer to the disclosure in paragraph [0017].)

The applicant will be notified of new reasons for rejection if such reasons for rejection are found.

LIST OF CITATIONS

1. Japanese Unexamined Patent Application, First Publication No. Hei 6-37697
2. Japanese Patent Application No. Hei 11-316117 (Japanese Unexamined Patent Application, First Publication No. 2001-136095)

RECORD OF PRIOR ART SEARCH

- Searched Technical Fields: IPC 7th Version H04B1/38-1/58
H04M1/02-1/23

- Prior Art Reference(s):

1. Japanese Unexamined Patent Application, First Publication No. Hei 4-111655
2. Japanese Unexamined Patent Application, First Publication No. Hei 8-331631
3. Japanese Unexamined Patent Application, First Publication No. Hei 11-30226
4. Japanese Unexamined Patent Application, First Publication No. Hei 11-68899
5. Japanese Unexamined Patent Application, First Publication No. Hei 11-74953
6. Japanese Unexamined Patent Application, First Publication No. Hei 11-215218

This record of the prior art search does not constitute the reasons for rejection.

拒絶理由通知書

特許出願の番号	特願2000-020702
起案日	平成14年 2月13日
特許庁審査官	溝本 安展 9473 5J00
特許出願人代理人	志賀 正武(外 3名) 様
適用条文	第29条第2項

この出願は、次の理由によって拒絶をすべきものである。これについて意見があれば、この通知書の発送の日から60日以内に意見書を提出して下さい。

理 由

<理由1>

この出願の下記の請求項に係る発明は、その出願前日本国内において頒布された下記の刊行物に記載された発明に基いて、その出願前にその発明の属する技術の分野における通常の知識を有する者が容易に発明をすることができたものであるから、特許法第29条第2項の規定により特許を受けることができない。

記 (引用文献等については引用文献等一覧参照)

- ・請求項 1, 2
- ・引用文献 1
- ・備考

当該請求項に記載された発明は引用文献1に記載された発明から当業者が容易に想到し得たものと認められる。

(表示手段を筐体のどの部位に設けるかは当業者が適宜選択し得る設計的事項にすぎない。)

<理由2>

この出願の下記の請求項に係る発明は、その出願の日前の特許出願であって、その出願後に出願公開がされた下記の特許出願の願書に最初に添付された明細書又は図面に記載された発明と同一であり、しかも、この出願の発明者がその出願前の特許出願に係る上記の発明をした者と同じではなく、またこの出願の時に於いて、その出願人が上記特許出願の出願人と同一でもないのに、特許法第29条の2の規定により、特許を受けることができない。

記 (引用文献等については引用文献等一覧参照)

- ・請求項 1, 2
- ・引用文献等 2
- ・備考

当該請求項に係る発明は下記2の特許出願の願書に最初に添付された明細書又は図面に記載された発明と同一である。(特に段落【0017】の記載を参照されたい。)

拒絶の理由が新たに発見された場合には拒絶の理由が通知される。

引用文献等一覧

1. 特開平6-37697号公報
2. 特願平11-316117号(特開2001-136095号)

先行技術文献調査結果の記録

- ・調査した分野 IPC第7版 H04B1/38-1/58
H04M1/02-1/23

・先行技術文献

1. 特開平4-111655号公報
2. 特開平8-331631号公報
3. 特開平11-30226号公報
4. 特開平11-68899号公報
5. 特開平11-74953号公報
6. 特開平11-215218号公報

この先行技術文献調査結果の記録は、拒絶理由を構成するものではない。

この拒絶理由通知の内容に関するお問い合わせ、または面接のご希望がございましたら下記までご連絡下さい。

特許審査第四部 伝送システム 溝本 安展

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